165599

Soil Gas Sampling Procedures

The following is a detailed description of the field related activities and the procedures involved in active soil gas extraction.

1. The probe borings will be advanced into the unconsolidated sediments utilizing three (3) foot probe rods, retractable point holder, and the hydraulic percussion hammer mounted on the main cylinder of the direct-push technology rig (DPT).

2. Once the desired depth has been achieved, the probe rods are pulled back a minimum of six (6) inches to insure that the retractable point or expendable point has disengaged so that a soil gas sample can be collected.

3. Connect the adapter thread coupler to a section of 0.125-inch polyethylene tubing that is lowered into the probe rods until the bottom is encountered. The tubing should extend approximately two (2) foot above the probe rods.

4. Turn the tubing in a counter-clock wise direction (left-handed threads) to engage the coupler adapter threads into the retractable point holder.

5. Connect the upper end of the polyethylene tubing to a four (4) inch section of silicone tubing, then attach to a section of polyethylene tubing coming from the active vacuum system valve on the operator control panel.

6. A vacuum will be placed in the tubing and the vacuum gauge observed to determine if a vacuum is present at the sample interval.

7. When the vacuum gauge indicates that a return to ambient pressure has been reached between the soil and the inside of the tubing, a soil gas sample can be collected.

8. Using a 60cc disposable syringe with a stainless steel needle, insert the needle into the silicone tubing section and withdraw a 60cc sample of soil gas. Make sure that the vacuum gauge returns to ambient pressure before the needle is removed from the tubing. The sample is now ready for direct injection into the on-site Gas Chromatograph (GC).

9. Remove the sample tubing from the probe rods and dispose.

10. Remove probing rods and sampling equipment from the probe boring.

11. Fill probe boring with bentonite to just below surface, charge bentonite with potable water, and restore the surface to its original condition (i.e. topsoil, asphalt, or concrete).

Hydro-LOGIC, Inc.
STANDARD OPERATING PROCEDURE
SOP No: HLI-SOP-A-015-R1
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TITLE: Method 8021

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REVISION DATE: November 6, 1998

APPROVED By: _____ Date: 11/11/98
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OBJECTIVE

This Standard Operating Procedure (SOP) is intended to provide guidance for the EPA Method 8021 at the facilities of Hydro-LOGIC, Inc. (HLI). The method is used to determine the halogenated and non-halogenated volatile organics benzene, bromobenzene, bomochloromethane, bromodichloromethane, bromoform, bromomethane, *n*-butylbenzene, *sec*-butylbenzene, *tert*-butylbenzene, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, chloromethane, 2-chlorotoluene, 4-chlorotoluene, 1,2-dibromo-3-chloropropane, dibromochloromethane, 1,2-dibromoethane, dibromomethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, dichlorodifluoromethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, 1,3-dichloropropane, 2,2-dichloropropane, 1,1-dichloropropene, ethylbenzene, hexachlorobutadiene, isopropylbenzene, 4-isopropyltoluene, methylene chloride, naphthalene, *n*-propylbenzene, styrene, 1,1,1,2-tetrachloroethane, tetrachloroethene, 1,1,2,2-tetrachloroethane, toluene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, trichlorofluoromethane, 1,2,3-trichloropropane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, vinyl chloride, and xylenes (o,m,p). Hydro-LOGIC, Inc. uses a fused silica capillary column for EPA Method 8021.

INTRODUCTION TO PURGE AND TRAP OPERATIONS

A. An inert gas (helium) is bubbled through 10 ml of a water sample or 2 grams of a well-blended soil sample (mixed with 10 ml of reagent water) from a 2-ounce soil jar, in a specially designed purging chamber at ambient temperature. Soil-gas samples can be directly injected onto the traps through the front of the purge port of the autosampler. The purging efficiently transfers all volatile organics to two sorbent traps where the organics are concentrated. The HLI purge and trap apparatus is an OI Analytical 4560 Purge and Trap, and the method requires two traps loaded with Carbopak B and Carbosieve II respectively. After purging is complete (40 ml/min for 5 min.), the traps are rapidly heated and backflushed with the inert gas to desorb the volatile organics onto a gas chromatographic column. The gas chromatograph is

INTRODUCTION TO PURGE AND TRAP OPERATIONS (continued)

temperature programmed to separate the volatile organics, which are then detected with a Photo Ionization Detector (PID) run in series with a Dry Electrolytic Conductivity Detector (DELCD). HLI quantifies all volatile halogenated organics with the DELCD, while the PID is used for non-halogenated volatile organics.

B. There are possible interference problems identified by the USEPA when operating this purge and trap method. These problems are as follows. (1) Impurities in the purge gas, and organic compounds outgassing from the plumbing ahead of the trap, account for the majority of contamination problems. The analytical system will be demonstrated to be free from contamination under analysis conditions by running laboratory reagent blanks. (2) Samples can be contaminated by diffusion of volatile organics through the septum seal into the sample during shipment and storage. Trip blanks carried through the sampling and handling protocol can serve as a check on such contamination. (3) Contamination by carry-over can occur when a sample with unusually high levels of halogenated organics is encountered. To reduce carry-over, the purging device and sample syringe will be rinsed with GC grade methanol, followed by reagent grade water. This is followed by an analysis of a blank, to check for carry-over, and possible bakeout of the entire purge and trap and chromatographic system at 250 °C.

C. Each standard, reagent, and/or solvent involved with this method should be treated as a potential health hazard. Exposure to these chemicals must be reduced to the lowest possible level by all means available. All employees qualified to perform this method will review the chemical properties and hazards associated with each standard and reagent. Material Safety Data Sheets (MSDS) are located at the offices of Hydro-LOGIC, Inc. (HLI), and have open access to all analysts and technicians involved in gas chromatographic preparations and analysis. The HLI safety manager will explain any special safety precautions involved in the method and before the analyst can perform any of the steps in the 8021 method.

EQUIPMENT AND MATERIALS

A. The HLI purge and trap system consists of three operable units: a purging device, a trap, and a desorber. The commercial purge and trap device HLI employs is an OI Analytical 4560 Purge and Trap, and the method requires two traps loaded with Carbopak B and Carbosieve II respectively. The purging device accepts samples at least 10-ml or 2-g in size for water and soils respectively. Up to 30-cc of a soil-gas (or air) sample can also be injected through the front of the purging ports. The purging device strips volatile organics from samples using ultra-high purity helium. The desorber is capable of rapidly heating to 225 °C to thoroughly desorb all volatile organics to the chromatographic column.

EQUIPMENT AND MATERIALS (continued)

B. HLI uses SRI model 8610 B & C type gas chromatographic (GC) systems for the analysis of volatile organics. These systems are capable of performing purge and trap, direct injection (split/splitless), and thermal desorption type analyses. Each GC is equipped with a FID, PID, and DELCD (dry electrolytic conductivity detector) detector. The FID and DELCD detectors are made by SRI, while the PID is a HNU-type 10.2 electron volt PID lamp supplied by Scientific Services Company. The SRI GC is temperature programmable between 0 °C and 350 °C at rates between 0.1 °C and 30 °C per minute. Additionally, all pressures are flow controlled to within 0.1 psi of the method settings.

C. HLI uses capillary columns supplied by RESTEK. The two columns commonly employed are: (1) A MXT-1 30-meter long x 0.53 mm ID Silcosteel® capillary column coated with 100% dimethyl polysiloxane; or, (2) a MXT-624 75-meter long x 0.53 mm ID Silcosteel® capillary column coated with 6% cyanopropylphenyl – 94% dimethyl polysiloxane.

D. Hamilton supplies all HLI syringes. HLI uses a 10-ml glass hypodermic syringe with Luerlok tip, and 10-ml (± 0.1-ml) boroscilicate glass pipets for sample preparation. HLI also uses 0.5, 1.0, 2.0, and 10.0-µl micro syringes for spiking samples, and introduction of standards to the GC. The vendor standardizes all HLI syringes. All syringes are rinsed with methanol and reagent water between uses. Each syringe is periodically checked for cross contamination and leakage.

E. HLI uses analytical balances capable of accurately weighing soil samples to ± 0.01-grams. Fisher Scientific supplies the HLI analytical balances.

F. Fisher Scientific supplies all pipets, volumetric flasks, beakers, and bottles used in the preparation of samples and standard stock solutions for this method.

SAMPLING AND PRESERVATION REQUIREMENTS

A. There are two main requirements for sample preservation:

1. There will be at least two 40-mL amber vials, or one 2-ounce soil jar, for each sample to be tested for volatiles.

2. All samples should be kept at 4 degrees C with ice or by refrigerator, and all samples will be analyzed within 14 days.

B. There are two main requirements for each sampling trip:

1. Each trip should contain at least one trip blank. A trip blank consists of distilled water that is contained in the sample jars and sealed.

SAMPLING AND PRESERVATION REQUIREMENTS (continued)

2. Each trip should contain at least one field blank. A field blank is a blank of water that is subjected to the same conditions as the sample.

QUALIFICATIONS OF PERSONNEL

A. The operator must demonstrate the ability to generate reliable data using check standards, both internal and external.

B. The sample must be prepared by a technician with experience in sample preparation and must be able to demonstrate that cross-contamination from each sample preparation has not occurred. At Hydro-LOGIC the analyst prepares all volatile samples.

C. Key personnel at Hydro-LOGIC, Inc. who operate the GC systems are:

Peter T. Guy, MS
Laboratory Manager

Don Dulaney
Vice President

Steven Knapp
Analytical Chemist

REAGENTS

A. Reagent grade distilled water, supplied by Hinkley & Schmitt®, is used in all analyses performed by HLI. HLI bubbles contaminant-fee inert gas through the water for one hour to ensure the water is free of all volatile organics.

B. HLI uses either pesticide or GC grade methanol for preparation of all standards and samples, and for cleaning or rinsing equipment and glassware.

C. HLI purchases certified stock standard solutions from one of four vendors: Ultra Scientific, SUPELCO, RESTEK, and Alltech. Standard stock solution certificates are kept on file at the offices of HLI, along with log books containing information on how each standard was handled, labeled with a corresponding HLI standard number, diluted (if applicable), and expected expiration date.

CALIBRATION

A. <u>External Standard Calibration.</u> Prepare a calibration range, with a minimum of five calibration points, using a certified stock standard of USEPA Method 8021 purgeable halocarbons kit. Use either a one or two microliter Hamilton Series 7000 syringe to inject each standard calibration point into the 16 X 150mm borosilicate glass purge vessel containing 10-ml of reagent grade water. One standard should be at a level at, or near, the state, USEPA, or project specified

CALIBRATION (continued)

minimum detection level (MDL). The other concentrations should correspond to a range that should define the working range of the detector.

B. Analyze each calibration standard and tabulate peak area responses, for each component of the method, versus the concentration in the standard. Generating the calibration curve can be done using either Excel® spreadsheets, or programming internal to the Peaksimple® software that operates the GC. The calibration curve is a linear algebraic function of the form $Y = mX + B$. Each compound of interest in the method should have its own calibration curve that has a correlation coefficient (r-value) of not less than $r = 0.99$.

C. Internal Standard Calibration. The analyst must select one or more internal standards that are similar in analytical behavior to the compounds of interest. These internal standards must also not be affected by method or matrix interferences. The compounds bromochloromethane, 1-chloro-2-bromopropane, and 1,4-dichlorobutane can be used successfully as an internal standard.

D. Prepare a calibration range, with a minimum of five calibration points, using a certified stock standard solution containing any or all of the compounds bromochloromethane, 1-chloro-2-bromopropane, or 1,4-dichlorobutane. Use either a one or two microliter Hamilton Series 7000 syringe to inject each internal calibration point into the 16 X 150mm borosilicate glass purge vessel containing 10-ml of reagent grade water, and a purgeable halocarbons calibration standard. Each internal calibration standard point should be at a level at, or near, the state, USEPA, or project specified minimum detection level (MDL). The other concentrations should correspond to a range that should define the working range of the detector.

E. Analyze each calibration standard, and tabulate area responses against concentration for each compound and internal standard, using either Excel® spreadsheets, or programming internal to the Peaksimple® software that operates the GC. Calculate response factors (RF) for each compound of interest in the method, using:

$$RF = \frac{(A_p)(C_{is})}{(A_{is})(C_p)}$$

Where:

A_p = Response for the parameter to be measured.
C_{is} = Concentration of the internal standard.
A_{is} = Response for the internal standard.
C_p = Concentration of the parameter to be measured.

CALIBRATION (continued)

F. If the RF value over the range of standards has a relative standard deviation of less than 10%, then the results can be used to plot a calibration curve of response ratios versus response factor (A_i/A_{is} vs. RF).

QUALITY CONTROL

A. These quality control guidelines will apply to all volatile halogenated organic compounds analyzed by the laboratory at HLI. Each analyst will maintain records to document the quality of data that is generated, and ongoing data quality reviews will be performed to show that quality checks are within established performance criteria for the method.

B. For the full suite of quality control checks the analyst will, at a minimum, perform the following QA/QC checks at a rate equivalent to 10% of all samples analyzed for each project. The frequency of certain QA/QC checks can be reduced if spike recoveries from samples meet all specified quality control criteria.

1. A method blank, which is a blank that is prepared in the lab in the same manner as the samples using reagent grade water. Method blanks will include surrogate spikes.

2. A laboratory control spike, which is a sample prepared by the analyst, containing method specific compounds of interest, to determine if the instrument is performing correctly. The analyst should spike 1-µl of a second source, certified standard stock solution of purgeable halogenated organics to 10-ml of reagent grade water. Analyze the laboratory control sample by purge and trap, and calculate the percent recovery for each compound of interest. Each compound of interest should have a recovery within ±30% of the expected concentration spiked. If one or more compounds of interest fail the acceptance criteria, then repeat the laboratory control spike procedure. If one or more of the parameters still fail, then locate and correct the source of the error, and retest all samples since the last acceptable performance evaluation, as determined by the analyst. Laboratory control samples will include surrogate spikes.

3. A matrix spike, which is a true sample the analyst assumes to be of low to non-detectable concentration, and is spiked with 50 µg/l of a second source, certified standard stock solution of purgeable halogenated organics. The matrix spike sample is handled and analyzed as every other sample in the method, and the percent recovery of each compound of interest is calculated by:

$$\%R = \frac{SSR - SR}{SA} \times 100$$

QUALITY CONTROL (continued)

Where: SSR is the spiked sample result,
SR is the unspiked sample result, and
SA is the spike amount (50 µg/l).

Each compound of interest should have a recovery within approximately 35% of the expected concentration spiked (65-140%). If one or more parameters of the matrix spike fail expected recovery limits, check quality control parameters of the laboratory control spike and surrogate spike. If these values are within limits, matrix interferences are assumed to exist and values associated with this sample are flagged. If other quality control parameters are outside acceptable limits, a system performance error is assumed to exist and the analyst must locate and correct all errors, and retest all samples since the last acceptable performance evaluation, as determined by the analyst. All matrix spike samples will include surrogate spikes.

4. A matrix spike duplicate, which is a sample identical to and analyzed sequentially to the matrix spike sample. A matrix spike duplicate will be spiked in the same manner, and with the same concentration, corresponding to the associated matrix spike sample, and will be analyzed subsequently to the matrix spike sample. The analyst will determine the percent recovery by the same manner as the matrix spike sample, and will calculate the precision (RPD) between the two samples as follows:

$$RPD = \frac{2[MSR-MSRD]}{MSR+MSRD} \times 100$$

Where: MSR is the matrix spike percent recovery, and
MSRD is the matrix spike duplicate percent recovery.

Each compound of interest, as in the matrix spike sample, should have a recovery within approximately 30% of the expected concentration spiked (65-140%). Additionally, the RPD between the matrix spike and its duplicate should be within 30% of each other. However, the results on the matrix spike and matrix spike duplicate are not by and of themselves used to qualify data. In a strict sense, the matrix spike and duplicate recoveries are applicable to only the sample that was spiked. High or low compound recoveries can be related to the behavior of compounds of similar chemical structure or volatility, or the recoveries may be indicative of problems with the results obtained for all target analytes in the sample. In any case high or low recoveries are appropriately flagged and analysis continues. Only in the presence of other qualifying data (i.e. LCS, blank, etc...), or the repeated inability to generate acceptable matrix spike results over a period of time, will the analyst take action to correct system performance and rerun samples.

QUALITY CONTROL (continued)

5. A continuing calibration check, which is a sample prepared by the analyst in the same manner as an initial calibration point, and is used to monitor system performance. A continuing calibration check containing all target analytes and system monitoring compounds (i.e. surrogates) is required to be performed at the beginning of each day, after each set of 10 samples, and at the end of a data set. The analyst should spike a concentration of the primary certified standard stock solution, equivalent to the concentration of the mid-point of the initial calibration curve, into 10-ml of reagent grade water, and analyze by purge and trap as if it were a regular sample. The analyst will then compare the concentration returned in the calibration check sample, for each target analyte, with the concentration of the corresponding initial calibration point, and calculate the percent difference (%D) between the two. The %D for all calibrated compounds of interest should be less than 15% between the initial calibration point and the continuing calibration check. If any calibrated target analyte falls outside the acceptance criteria, another calibration check must be run and compared to the initial calibration point. If the second calibration check also fails acceptance criteria, the analyst will generate a new initial calibration curve, and rerun or flag samples at his/her discretion, before continuing with additional sample analysis.

6. Internal standards, also known as surrogates, will be added to all samples, blanks, spikes, and calibration checks to monitor the system performance. The analyst will spike a final concentration of 50 parts per billion (ppb) of surrogate to all samples, and calculate a percent recovery that should fall within the 65-140% acceptance criteria. The primary surrogate that HLI will use for this method is bromochloromethane. The recoveries of the compounds are used to assess the matrix effects of the sample upon the analysis and to assess the performance of the analytical system for each sample analysis. Poor recoveries may indicate matrix effect, poor purging efficiency, poor spiking efficiency, or non-quantitative transfer of the analytes from the purging system to the GC. When analysis of a sample results in an unacceptable surrogate recovery, the sample should be reanalyzed to verify that the unacceptable recovery is a matrix-derived problem, rather than a laboratory problem. If the reanalyzed sample generates acceptable recoveries, then the reanalyzed sample is reported and the original is omitted. If the reanalysis of the sample again yields unacceptable surrogate recoveries, both samples may be reported, with appropriate estimate flags, at the discretion of the analyst. Only when samples continuously yield low surrogate recoveries, or in the presence of other unacceptable quality control data, will the analyst check system performance and rerun samples as deemed necessary. When a system monitoring compound on a blank does not pass acceptance criteria, system performance will be checked, and a blank rerun to demonstrate acceptable surrogate recovery.

PROCEDURE

A. The appropriate operating conditions for this method are tabulated for each GC, and are located with the laboratory log book corresponding to each GC. Appropriate operating conditions are also programmed within the PeakSimple® operating software associated with each GC, and will not be listed again within this method. Each analyst must become familiar with each GC's operating system, programming, and operating conditions for each method.

B. Each GC system will be calibrated at the beginning of each individual project, as described under the Calibration Section. While continuing with a project, each GC system will be checked for accuracy and consistency each morning, as described in the Quality Control Section, before any samples are analyzed.

C. Before a sample can be analyzed the analyst must allow it to reach ambient temperature. For soils the analyst will:

1. Weigh 2-g (± 0.01g) of blended soil, from the soil sample jar, and add it to the purge vessel, along with 10-ml of reagent grade water. Under conditions where the soil sample has obviously high levels of target analytes (i.e. through olfactory and visual senses), the analyst will appropriately reduce the volume of actual sample (dilute). After the sample weight is recorded, cap the purge vessel and mix the sample with the vortex-mixing machine.

2. Add appropriate matrix, standard, or surrogate spiking solutions, if applicable, through the top of the purge vessel, using a 1-µl Hamilton Series 7000 syringe. The syringe tip should penetrate the surface of the solution to ensure proper transfer of spiking solution.

3. Attach the purge vessel, containing sample and appropriate spiking solutions, to the purging unit, and screw tightly into place. Take caution that overtightening will crack the purge vessel, and not enough tightness will cause the purge unit to literally blast the vessel and sample off of the unit.

4. Prompt the start command for the GC through the PeakSimple® software, and wait for analysis to complete. At this point the only thing the analyst need do is occasionally monitor the system to ensure proper purging, temperature ramping, and injector valve switching. If a system is visibly malfunctioning, the analyst will stop analysis and take appropriate action to correct system performance.

PROCEDURE (continued)

5. Upon completion of the analysis, identify the parameters in the sample by comparing the retention times of the peaks in the sample chromatogram with those of the peaks in the standard chromatograms. (The computer library of retention times should be able to accomplish this for the analyst, but the analyst should review each chromatogram for accuracy.) The width of the retention time window used to make identifications should be based upon measurements of actual retention time variations of standards over the course of a project. Three times the standard deviation of a retention time for a compound can be used to calculate a window size; however, the experience of the analyst should weigh heavily in the interpretation of the chromatogram.

6. If the response for a peak exceeds the working range of the system, prepare a dilution of the sample and reanalyze.

D. For waters the analyst will:

1. Use the Hamilton 10-ml syringe to pierce the septa of the sample VOA, and transfer 10-ml of sample to the purge vessel. Under conditions where the water sample has obviously high levels of target analytes (i.e. through olfactory and visual senses), the analyst will appropriately reduce the volume of actual sample (dilute). However, the total volume of liquid within the purge vessel should always result in a 10-ml volume. Add reagent grade water equivalent to the amount of sample taken under 10-ml, so that the final volume in the purge vessel is 10-ml (i.e. 5-ml sample + 5-ml water).

2. Add appropriate matrix, standard, or surrogate spiking solutions, if applicable, through the top of the purge vessel, using a 1-µl Hamilton Series 7000 syringe. The syringe tip should penetrate the surface of the solution to ensure proper transfer of spiking solution.

3. Attach the purge vessel, containing sample and appropriate spiking solutions, to the purging unit, and screw tightly into place. Take caution that overtightening will crack the purge vessel, and not enough tightness will cause the purge unit to literally blast the vessel and sample off of the unit.

4. Prompt the start command for the GC through the PeakSimple® software, and wait for analysis to complete. At this point the only thing the analyst need do is occasionally monitor the system to ensure proper purging, temperature ramping, and injector valve switching. If a system is visibly malfunctioning, the analyst will stop analysis and take appropriate action to correct system performance.

PROCEDURE (continued)

5. Upon completion of the analysis, identify the parameters in the sample by comparing the retention times of the peaks in the sample chromatogram with those of the peaks in the standard chromatograms. (The computer library of retention times should be able to accomplish this for the analyst, but the analyst should review each chromatogram for accuracy.) The width of the retention time window used to make identifications should be based upon measurements of actual retention time variations of standards over the course of a project. Three times the standard deviation of a retention time for a compound can be used to calculate a window size; however, the experience of the analyst should weigh heavily in the interpretation of the chromatogram.

6. If the response for a peak exceeds the working range of the system, prepare a dilution of the sample and reanalyze.

CALCULATIONS

A. Determine the concentration of individual target analytes in each sample. The target analyte list will be project specific, and it is the responsibility of the analyst to know the project specific target list before any analysis begins. The project specific, target analyte list can be obtained from the project files and contract administrators.

B. If the external standard calibration procedure is used, calculate the concentration of the parameter being measured from the peak response using the calibration curve determined in the Calibration Section A.

C. If the internal standard calibration procedure is used, calculate the concentration in the sample using the response factor (RF) determined in the Calibration Section C.

$$\text{Concentration} = \frac{(A_p)(C_{is})}{(A_{is})(RF)}$$

Where:

A_p = Response for the parameter to be measured.
C_{is} = Concentration of the internal standard.
A_{is} = Response for the internal standard.

D. Report the results in mg/kg for soil, and µg/l for water, without correction for recovery data. All quality control data obtained will be reported with the final sample report, within 7 business days of the completion of the project. Only actual sample results need be reported in the field, because the nature of the mobile laboratory is to provide real time results. Any analytical delays should be dealt with at the completion of the field day, or during any down time do to field delayed activities.

AUDITS

A. **Internal** - Internal audits shall be conducted at least biannually and more often if the QA/QC supervisor deems necessary. These audits shall follow the format laid down in the audit section of the Hydro-LOGIC, Inc. quality manual.

B. **External** - External audits shall be performed by inspectors for certified states, as well as clients. These audits may be unannounced. However, Hydro-LOGIC, Inc. reserves the right to accompany the auditors throughout the audit.